

Title: **Are Fishers Better or Worse Off from a Swordfish Fishery Closure? -- An Endogenous Switching Model for the Hawaii-based Longline Fisheries**

Author(s): Timothy Ming

Abstract: The swordfish fishery is one of Hawaii's most lucrative, and also most highly regulated, fisheries. According to the United Fishing Agency (UFA) fish auction data in 2005, average swordfish (shallow-set) revenue per trip was \$76,897.03 and average tuna (deep-set) revenue per trip was \$36,382.14. Swordfish trips, however, comprised of only 7% of all longline trips made in that year, and tuna trips comprised of the remaining 93%. After almost four years of closure due to litigation concerning sea turtle interactions in the Hawaii-based fisheries, the multi-million dollar swordfish fishery reopened in April 2004 under a set of strict protected species management regulations, including an effort cap of 2,120 sets and an allowable interaction limit of 17 loggerhead turtles and 16 leatherback turtles. In March 2006, however, Hawaii longline shallow-setters interacted with its 17th loggerhead turtle, prompting an immediate closure of the swordfish fishery for the remaining calendar year. The paper introduces an alternative perspective to the economic ramifications of the closure by implementing an endogenous switching regression model to predict the treatment effects of switching from shallow-set to deep-set fishing immediately after a closure. Results can also be used to predict the true impact of a future swordfish fishery closure on the earning potential of Hawaii swordfish fishermen by taking into the account the fishers' ability to switch fishing targets.